

MARKED-UP VERSION OF THE AMENDED CLAIMS

1. (amended) A built-up camshaft comprising
a pipe coated by a jointing coating on an outer cylindrical surface and an inner cylindrical surface and having an outer pipe diameter and an inner pipe diameter and having cam places, bearing ring places and pipe end places;

cams formed as rings with an outer cylindrical flange and an inner cylindrical flange and provided with the jointing coating on an inner cylindrical surface of the inner cylindrical flange and positioned at the cam places and bearing rings provided with the jointing coating on inner surfaces being in contact with the pipe and positioned at the bearing ring places and end pieces provided with the jointing coating on outer cylindrical surfaces and having an outer end pieces diameter bigger than the inner pipe diameter, wherein the jointing coating of the pipe and the jointing coating of the cams, the bearing rings and the end pieces create durable joints between the pipe and the cams, the bearing rings and the end pieces and wherein the surface coating prevents a tribocorrosion and increases load capacity as compared to bare compression joints [without joining coating].

9. (amended) A built-up camshaft comprising

a pipe coated with a crystalline phosphate coating on an outer cylindrical surface and having an outer pipe diameter;

a cam having an inner diameter larger than the outer pipe diameter and connected by means of a compression joint to the pipe and provided with the crystalline phosphate coating on surfaces being in contact with the pipe, wherein the crystalline phosphate coating prevents a tribocorrosion and increases load capacity as compared to compression joints without coating and creates a stable joint between the pipe and the cam;

a bearing ring having an inner diameter larger than the outer pipe diameter and connected by means of a second compression joint to the pipe and provided with a second crystalline phosphate coating on surfaces being in contact with the pipe, wherein the second crystalline phosphate coating prevents a tribocorrosion and increases load capacity as compared to compression joints without coating and creates a stable joint between the pipe and the bearing ring;

an end piece having an inner diameter larger than the inner pipe diameter and connected by means of a third compression joint to the pipe and provided with a third crystalline phosphate coating on surfaces being in contact with the pipe, wherein the third crystalline phosphate coating prevents a tribocorrosion and increases load capacity as compared to bare compression joints [without coating] and creates a stable joint between the pipe and the end piece.

12. (amended) The camshaft according to claim 10, wherein the pipe [or the solid rod], the cams, the end pieces, the bearing rings, and the other parts are made out of metal, ceramics, plastics or other materials, by cutting or non-cutting, by milling or forging in massive or profiled form.

16. (amended) A built-up camshaft comprising a pipe,
cams,
bearing rings,
end pieces, and
other parts, wherein the cams (3), the end pieces (6), the bearing rings, and the other parts are connected by means of longitudinal compression joints to the pipe, wherein the parts to be connected are provided with a suitable surface coating, and wherein the surface coating prevents a tribocorrosion and increases the load capacity as compared to [conventional] non-coated compression joints.

17. (new) A built-up camshaft comprising a solid rod,
cams,

bearing rings,

end pieces, and

other parts, wherein the cams (3), the end pieces (6), the bearing rings, and the other parts are connected by means of longitudinal compression joints to the pipe, wherein the parts to be connected are provided with a suitable surface coating, and wherein the surface coating prevents a tribocorrosion and increases the load capacity as compared to [conventional] non-coated compression joints.

REMARKS

Claims 1 through 16 continue to be in the case.

Claim 8 stands withdrawn from consideration

New claim 17 is being submitted.

Claims 1, 9, 12 and 16 are being amended.

New claim 17 is based on former claim 16.

1. The Office Action states that the request filed on March 29, 2002 for a Continued Prosecution Application (CPA) under 37 CFR 1.53(d) based on parent Application No. 09/476,521 is acceptable and a CPA has been established. An action on the CPA follows.

2. The Office Action states that the Amendment filed on February 27, 2002 with the certificate of mailing dated January 16, 2002 (Paper No. 17) has been entered.

3. The interlineations or cancellations made in the specification or amendments to the claims could lead to confusion and mistake during the examination, issue and printing processes. Accordingly, the portion of the specification or claims as identified below is required to be rewritten before passing the case to issue. See 37 CFR 1.125 and MPEP § 608.01(q).

All of the pending claims are required to be rewritten.

Applicants will provide rewritten claims.

4. Claim 8 stands withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in Paper No. 10.

5. The information disclosure statement filed July 3, 2000 fails to comply with 37 CFR 1.98(x)(3) because it does not include a concise explanation of the relevance, as it is presently understood by the individual designated in 37 CFR 1.56(c) most knowledgeable about the content of the information, of each patent listed that is not in the English language. It has

been placed in the application file, but the information referred to therein has not been considered. Applicant is advised that the date of any re-submission of any item of information contained in this information disclosure statement or the submission of any missing elements) will be the date of submission for purposes of determining compliance with the requirements based on the time of filing the statement, including all certification requirements for statements under 37 CFR 1.97(e). See MPEP § 609 T C(1).

Applicants plan to promptly file some statement relating to the relevance of certain documents not present in the English language.

6. The listing of references in the specification (German printed patent document 196 40 872.5 on page 5) is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO892, they have not been considered.

Applicants are in the process of preparing a list as requested in the Office Action.

7. The information disclosure statement filed on August 15, 2001 (journal articles G. Pursche, H. Gropp) which is incorporated into pages 31 and 32 of the Amendment filed on August 15, 2001 (Paper No. 15) fails to comply with 37 CFR 1.98(a)(1), which requires a list of all patents, publications, or other information submitted for consideration by the Office. It has been placed in the application file, but the information referred to therein has not been considered.

Applicants are in the process of preparing a list as requested in the Office Action.

8. The proposed drawing correction and/or the proposed substitute sheets of drawings, filed on July 31, 2000 have been partially approved.

(A) New Fig. 4 has been disapproved because:

(a) new Fig. 4 introduces new matter such as the end piece 4 as now shown. The original Fig. 2 shows that the inner diameter of the pipe 1 is varied: (1) at the junction of the end piece 4 and the pipe 1 as shown by applicant's phantom line; and (2) at referential numeral 1 (see attached Exhibit). However, Fig. 4 shows that the inner diameter of the pipe 1 is constant. The original disclosure does not convey the concept that the inner diameter of the pipe 1 is constant, thus, it is unsupported by the record as filed. In re Anderson, 176 U.S. P.Q. 331 (CCPA 1973); and

(b) new Fig. 4 is inconsistent with the description in Paper No. 9. The insertion on page 6, line 12 of the specification, states that the outer diameter of the end piece 4 is slightly larger than an inner diameter of the pipe 1. However, Fig. 4 shows that the outer diameter of the end piece 4 is equal to the inner diameter of the pipe 1.

Applicants are proposing a revised Fig. 4. The revised Fig.4 shows the difference of the outer diameter of the end piece 4 and the inner diameter of the pipe 1.

(B) The corrected Fig. 3 has been disapproved since it introduces new matter. The original drawings do not show the bearing rings. The

corrected Fig. 3 now shows the bearing 6 which is identical to the cam 3. The showing and description of a specific type of bearing within a full spectrum of possible bearings is considered under the present disclosure to be new matter. Cf, In re Smith, 173 U.S.P.Q. 679 (CCPA 1972) and Ex parte George, 230 U.S.P.Q. 575, 578 (Bd. Pat. App. & Inter. 1986).

Applicants are proposing a revised Fig. 3. The revised Fig.3 shows the bearing rings deleted from Fig. 3.

(C) The corrected Fig. 1 has been approved.

Applicants gratefully acknowledge the approval of the corrected Fig. 1.

9. The proposed drawing correction and/or the proposed substitute sheets of drawings, filed on February 27, 2002 have been disapproved because:

(A) new Figs. 9-18 introduce new matters. For example:

(a) the size, shape, and/or location of the bearing rings 6 as now shown in Figs. 9-18 are unsupported by the record as filed. In fact, the

original drawings do not show the bearing rings 6. The showing of a specific size, shape, and/or location of the bearing rings within a full spectrum of possible bearing rings is considered under the present disclosure to be new matter. Cf., *In re Smith and Ex pane George*, supra; and

(b) the orientation of the cams 3 as now shown in Figs. 11 and 18 is unsupported by the record as filed. In fact, the original Fig. 3 shows that the cams 3 are oriented in the same direction. However, new Figs. 11 and 18 show that the cams 3 are oriented in different directions (some are pointed to the left and some are pointed to the right). The different orientations of the cams 3 introduce new matter; and

(B) the new drawings are inconsistent with the specification, e.g., the Brief Description of the Drawings in the specification does not describe new Figs. 9-18.

Applicants are proposing to delete Figs. 9 through 18. The revised Fig. 1 shows the same cams orientation.

10. The original drawings stand objected to because:

(a) the drawings should show the plane upon which a sectional view such as Fig. 1 is taken; and

Applicants are proposing a correction with a revised Fig. 3a. The revised Fig.3a shows section planes A-A and B-B for Figs. 1, 1a, 2, 2a.

Upon approval of these Figures, applicants are planning to provide a corresponding correction to the specification.

(b) each part of the invention, such as, (1) the second compression joint, the second crystalline phosphate coating, the third compression joint, and the third crystalline phosphate coating in claims 9 and 10; and (2) the solid rod in claim 15 should be designated by a referential numeral or character.

Applicants are proposing a correction with a revised Fig. 4. The revised Fig.4 shows that the first, second and third compression joints are shown by ref. numbers 21, 22 and 23 of the Fig.4. The crystalline phosphate coatings have reference numbers 2 (first), 2a (second) and 5 (third). The solid rod as the shaft variation has the reference number 101 of the figs. 1a, 2a and 4a.

Correction is required.

Applicants are providing corrections with this amendment.

11. The original drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the claimed features, such as, (a) the bearing rings in claims, 1, 6, etc. ; (b) the third crystalline phosphate coating in claims 9 and 10; and (c) the solid rod in claim 15 must be shown or the features canceled from the claims. No new matter should be entered.

Applicants are proposing a correction with revised Figs 4 and 4a. The revised Figs.4 and 4a show the bearing ring 6. The third crystalline phosphate coating (5) is shown on the Fig.4. The solid rod 101 is shown on the Figs. 1a, 2a and 4a.

The original drawings according to the Office Action merely show: (a) the pipe 1 as described on page 6 of the specification; and (b) only two coatings (i.e., first and second coatings) 2 and 5 as described in the original specification.

Applicants are proposing a correction with a revised Figures. The crystalline phosphate coatings have now received the reference numeral 2 (for the first coating), 2a (for the second coating) and 5 (for the third coating).

12. The amendment filed February 23, 2000 is objected to under 35 U.S.C. 132 because it introduces new matter into the disclosure. 35 U.S.C. 132 states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is, e.g., as follows:

(A) the insertion in line 9 on page 6 of the specification. The original disclosure does not convey the concept that the cam 3 shown in Fig. 1 has an opening diameter slightly smaller than an outer pipe diameter, thus, it is new matter. In re Anderson, supra;

(B) the insertion in line 12 on page 6 of the specification. The original disclosure does not convey the concept that the outer diameter of the end piece 4 is slightly larger than an inner diameter of the pipe 1, thus, it is new matter. In re Anderson, supra; and

(C) the insertions in lines 13 and 14 on page 6 of the specification. The original drawings do not show the bearing rings. The corrected Fig. 3 now shows the bearing 6 which is identical to the cam 3. The showing and description of a specific type of bearing within a full spectrum of possible bearings is considered under the present disclosure to be new matter. Cf., *In re Smith*, 173 U.S.P.Q. 679 (CCPA 1972) and *Exparte George*, 230 U.S.P.Q. 575, 578 (Bd. Pat. App. & Inter. 1986).

Applicant is required to cancel the new matter in the reply to this Office Action.

Applicants propose to delete the bearing from Fig. 3.

13. The specification stands objected to as failing to provide proper antecedent basis for the claimed subject matter, such as, (a) "a second compression joint," "a second crystalline phosphate coating," "a third compression joint" and "a third crystalline phosphate coating" in claims 9 and 10; and (b) "an elongated part" in claim 10. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction is required. 14. The text of those sections of

Title 35, U. S. Code not included in this action can be found in a prior Office Action.

As the language employed furnishes labels for the elements of the invention, applicants do not yet realize what language would be more acceptable to the Examiner.

15. Claims 9-15 stand rejected under 35 U. S. C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The Office Action refers to new matter.

Claims 9 and 10 now call for the second compression joint, the second crystalline phosphate coating, the third compression joint, and the third crystalline phosphate coating.

Although the original drawings (Figs. 1-3) show only two coatings 2 and 5 as described in the original specification, however, claims 9 and 10

now claim three coatings as evidenced by the term "a third crystalline phosphate coating." The third crystalline phosphate coating is unsupported by the record as filed.

Applicants submit that the third crystalline coating is associated with the reference numeral 5.

The Office Action refers to inadequate description.

Claims 9 and 10 now call for the second compression joint, the second crystalline phosphate coating, the third compression joint, and the third crystalline phosphate coating. The original drawings (Figs. 1-3) show only two coatings 2 and 5 as described in the original specification. On the filing date, it is unclear as to how applicant makes/uses the third crystalline phosphate coating as claimed.

The third crystalline coating is shown associated with the reference numeral 5.

According to the Office Action, Claim 15 calls for a solid rod. However, applicant's drawings show only a pipe as described on page 6 of the specification. It is unclear as to how applicant makes/uses the camshaft that has an elongated part being a solid rod as claimed.

Applicants propose the following correction: The solid rod as the shaft variation has the reference numeral 101 in the corrected Figs. 1a, 2a and 4a. The end piece for the solid rod has an inner cylindrical surface, where the reference numeral for the end piece is 104.

16. Claims 1-7 and 9-16 stand rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "compression joints without joining coating" in claims 1 and 9 is vague and indefinite since it is not clear what type of compression joints are without joining coating.

Claims 1 and 9 are being amended to use now language "bare" compression joints.

The recitation "conventional compression joints" in claim 16 is vague and indefinite since it is not clear what type of compression joints is considered to be "conventional."

The language "conventional" is now removed from claim 16. The language non-coated compression joints is proposed for claim 16.

It is unclear:

(A) which structures define the claimed elements, such as, the third compression joint, and the third crystalline phosphate coating in claims 9 and 10. Although the original drawings (Figs. 1-3) show only two coatings 2 and 5 as described in the original specification, however, claims 9 and 10 now claim three coatings as evidenced by the term "a third crystalline phosphate coating." Applicant is respectfully urged to identify each claimed element with reference to the drawings; and

(B) whether the term that appears at least twice, e.g., "compression joints" in claims 6 and 7 refers to the same or different things. See M.P.E.P. 2173.05(o). Applicant is respectfully urged to identify each claimed element with reference to the drawings.

The crystalline phosphate coatings have reference numbers 2 (first), 2a (second) and 5 (third).

The use of alternative expression "or" in claims 12 and 16, etc. renders said claims vague and indefinite.

Claims 12 and 16 are being amended to avoid the objectionable language.

17. Claims 1-7 and 9-16, as best understood, stand rejected under 35 U.S.C. 102(a) as anticipated by or, in the alternative, under 35 U. S.C. 103(a) as obvious over Seim et al. (Publication "Erhöhung der Sicherheit gehauter . . ." cited in EPO Search Report in the parent application).

35 USC 102(a)

Regarding claim 1, Seim teaches a built-up camshaft comprising a pipe coated by a joint coating on outer and inner cylindrical surfaces (id., Table on page 289 and Fig. 12 on page 290) and having outer and inner pipe diameters; and having cam places, bearing ring places and pipe end places (e.g., Figs. 1 and 2, page 284 and Fig. 5 page 286); cams formed as rings with outer and inner cylindrical flanges (Fig. 12) and provided with the joint coating on an inner cylindrical surface of the inner flange and

having a cam opening diameter. The outer end pieces of Seim inherently have an outer diameter bigger than the inner pipe diameter so that its outer end can be slipped into the pipe and joined to the pipe.

Claim 1 and other claims below are anticipated by Seim since Seim's camshaft inherently has the bearing rings and end pieces. In fact, the bearing rings and end pieces are notoriously conventional in the camshaft art (see, e.g., US Patent No. 5,299,881 issued to Mettler-Friedh and references classified, e.g., in Class 74, subclass 567, and Class 123, subclass 90.6 of the Office).

Without the bearing rings and end pieces, one would not be able to assemble or mount Seim's camshaft to other parts of the internal combustion engine, i.e., it would be inoperative for its intended purposes. See *In re Berg*, 46 U.S.P.Q.2d 1226 (CAFC 1998). In addition, it is well settled that the "Wherein" or "whereby" clause that merely states inherent result of the limitations in the claim adds nothing to the claim's patentability or substance. *Texas Instruments Inc. v. International Trade Commission*, 26 U.S.P.Q.2d 1018 (CAFC 1993).


Applicants are in the process of preparing a declaration under 37 CFR 1.132 to show patentability of the present invention and will submit the declaration as soon as it becomes available.

Reconsideration of all outstanding rejections is respectfully requested.

All claims as presently submitted are deemed to be in form for allowance and an early notice of allowance is earnestly solicited.

Respectfully submitted,

Herbert Gropp et al.

By: 

Horst M. Kasper, their attorney
13 Forest Drive, Warren, N.J. 07059
Tel.: (908)526-1717; Fax: (908)668-5262
Reg.No. 28559; Docket No.: RUM212

*%(RUM212A7(February 3, 2003(sn(rep-am